

# H·A·D NEWS

*The Newsletter of the Historical Astronomy Division  
of the American Astronomical Society*

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## In This Issue

The January 2017 HAD Meeting	1
From the Chair	2
From the Vice-Chair	2
From the Secretary-Treasurer	3
From the Past Chair	3
Minutes of the January 2017 Town Hall	4
Concerning the Archives of AAS Journals	6
The AAS Oral History Project	7
A Note of Thanks	8
Swarthmore Seeks New Homes for Sproul Observatory's Instruments	8
Chasing Eclipses at the Adler Planetarium	9
The Bruce Telescope and Miss Leavitt's	11
Work on Exhibit	
A Call for Reviewers	13
Book News	13

## The January 2017 HAD Meeting

*Ken Rumstay, Valdosta State University*

The Historical Astronomy Division met (in conjunction with the 229<sup>th</sup> meeting of the AAS) on January 3<sup>rd</sup> and 4<sup>th</sup> at the Gaylord Texan Resort & Convention Center in Grapevine, Texas. Fourteen oral presentations were made in three sessions on Tuesday and Wednesday, and seven HAD posters were available for viewing all day on Wednesday.

The first oral session was devoted to the 2017 Donald E. Osterbrock Prize, and to the work recognized by that award: the *Biographical Encyclopedia of Astronomers*, 2<sup>nd</sup> ed. (Springer, 2014). The prize was awarded to Tom Hockey, Editor-in-Chief, who described to the audience some of the trials and tribulations in bringing this monumental four-volume work to fruition. HAD



Tom Hockey receives the 2017 Donald E. Osterbrock Prize from HAD Prize Committee Chair Jay Pasachoff and Secretary-Treasurer Ken Rumstay.



At a special session devoted to the 2017 Donald E. Osterbrock Prize, Tom Hockey, Virginia Trimble, and Marc Rothenberg described their experiences in preparing the *Biographical Encyclopedia of Astronomers* (2<sup>nd</sup> edition).

Chair Marc Rothenberg and Virginia Trimble (Associate Editor of the *BEA II*) then described their personal experiences with it.

The 2017 Osterbrock Prize actually honors *all* of the more than four hundred authors who contributed to the *Biographical Encyclopedia of Astronomers*, and certificates (similar to that presented to Dr. Hockey) have been sent by e-mail to them all.

On Wednesday morning we enjoyed a special oral session organized by Dr. Martin Harwit. *Infrared Astronomy from Above the Atmosphere* featured three excellent invited speakers: Judith Pipher, Edwin Erickson, and Martin himself.

The HAD Town Hall (our annual business meeting) followed the morning session, and was attended by approximately forty people. Minutes of the meeting appear on page 4. It concluded with the introduction of the new officers for 2017-2019. Pat Seitzer assumed the role of Chair, and Marc Rothenberg became Past Chair (and Chair of the Prize Committee). Our new Vice Chair is Alan Hirshfeld, and Pedro Raposo and Robert Stencil are the new At-Large members of the Executive Committee.

Wednesday afternoon brought a final session of contributed talk. Abstracts of all the presentations are available for viewing at the HAD website ([https://had.aas.org/membership/had\\_meetings/2017](https://had.aas.org/membership/had_meetings/2017)). The HAD meeting ended with an informal dinner at the Texan Station Sports Bar and Grill.

[hadsec@aas.org](mailto:hadsec@aas.org)



### **From the Chair**

*Patrick Seitzer, University of Michigan*

This is my first column as Chair of the Historical Astronomy Division. I salute my predecessor, Marc Rothenberg, for his valued service in this

position, and for taking the time to instruct me in my duties. Alan Hirshfeld assumed the duties of Vice-Chair of HAD at the January 2017 AAS meeting in Grapevine, and is now responsible for obituaries of AAS members. And our HAD Secretary, Ken Rumstay, is doing a magnificent job, including putting this newsletter together.

At the HAD Business Meeting in Grapevine we started a discussion of different formats and additional locations for HAD meetings. Further information on this can be found in the HAD Secretary's column in this newsletter. Nothing firm has been decided yet, and I look forward to receiving comments from you on these matters.

Our Division now has over 300 members, a new record! Our sessions at the Grapevine meeting were well attended. I ask everyone to encourage those AAS members who are not currently HAD members, but who are interested in the history of astronomy, to join!

I look forward to meeting many of you at upcoming AAS meetings. Please send me your suggestions for ways to improve the Historical Astronomy Division!

[pseitzer@umich.edu](mailto:pseitzer@umich.edu)



### **From the Vice Chair**

*Allan Hirshfeld, University of Massachusetts at Dartmouth*

As recently-elected Vice-Chair of the Historical Astronomy Division, I thank my predecessor, Patrick Seitzer, for instructing me on my duties, which include maintaining the database of obituaries of deceased AAS members and writing a periodic column for this newsletter. To be honest, the result of the HAD election came as a surprise to me, but a very welcome one. I figure an introduction is worthwhile for those of you

who don't know me.

I have been a member of the physics department (originally, its only astronomer) at the University of Massachusetts at Dartmouth for the past thirty-nine years. I came to astronomy as a pre-teen, by way of books about the night sky and a small-aperture telescope set up in the driveway. My interest in the history of astronomy arose long afterward, during the late 1990s, when my enjoyment of teaching prompted me to write a book about the stars for a general audience. The publisher, rightfully wary of a first-time author, asked me to complete a sample chapter. At random, I chose the topic of stellar distances and began to draft a rather conventional treatment of the subject. It occurred to me that, despite all my academic training and post-degree self-study, I didn't know who measured the first stellar parallax or when the measurement was made. That it was Friedrich Bessel — who I had thought was "just" a mathematician — and that his historic achievement came in 1838 was doubly intriguing: Why Bessel? And why 1838 and not, say, 1738? (I've asked plenty of astronomy colleagues about the first stellar parallax measurement, and few know the who and the when.) I realized that for Bessel to have achieved success, he relied on technology and techniques developed incrementally over centuries by his antecedents. And therein lay the real story: not the solitary feat of one individual, but a true saga of human striving. What began as a sample chapter grew into my first book, *Parallax*. Ever since, history has informed my teaching and my writing, and elevated my appreciation of the work that science historians do.

I look forward to serving the Division in the role of Vice-Chair and welcome your assistance in preparing the official AAS obituaries of deceased colleagues. For the (long!) list of those without memorial tributes, please go to our website at <https://had.aas.org/obituaries/outstanding-obits>.

See you at the meetings!

[ahirshfeld@umassd.edu](mailto:ahirshfeld@umassd.edu)



### From the Secretary-Treasurer

*Ken Rumstay, Valdosta State University*

Greetings all! I would like to thank everyone who attended our meeting at Grapevine; it was a great success! My message here will be brief, because the minutes of the HAD Town Hall are extensive. I would simply like to make two requests of our readers:

- 1) Please be sure to inform the AAS of any changes in your contact information. We need your current e-mail address to keep you informed of HAD news!
- 2) As noted earlier, we have endeavored to send by e-mail certificates to all of the authors who contributed to the *Biographical Encyclopedia of Astronomers*. Unfortunately we do not have current e-mail address for many of them. If you provided a biography for the *Encyclopedia* and have not received a certificate from me, please contact me. You deserve to be recognized for your contribution!

[hadsec@aas.org](mailto:hadsec@aas.org)



### From the Past Chair

*Marc Rothenberg, National Science Foundation*

The primary responsibility of the Past-Chair of HAD is to chair the HAD Prize Committee. As I write this column, the committee is finishing its



deliberations for the 2018 LeRoy E. Doggett Prize. However, it is not too early to be thinking about the 2019 Donald E. Osterbrock Book Prize, even though the deadline for nominations is some ten months away. Since 2011 the award has gone to four magnificent publications. The list of past awardees, available on the HAD website at [https://had.aas.org/awards\\_and\\_prizes/osterbrock\\_book\\_prize](https://had.aas.org/awards_and_prizes/osterbrock_book_prize), demonstrates the breadth of topics in the field of the history of astronomy. I fully expect winner number five to be an equally important contribution to the field.

Let me remind everybody of the rules. To be eligible for the 2019 prize, a book must have been published between 2014 and 2017. Any member of HAD can nominate a book. To nominate, send a letter of support and the publication data to the Secretary-Treasurer. If you are aware of reviews of the book, please include copies if possible; if that is not possible, then please include references to the reviews.

Let me make it clear that the letter of support need not be a full-fledged book review! What it should do is make it clear to the Prize Committee, whose members might lack expertise in the book's particular subject area in the history of astronomy, is why the book is important within the context of that subject area. I can assure you that past members of the committee were not experts in either Mayan or Chinese astronomy. Send in those nominations!

[josephhenr@aol.com](mailto:josephhenr@aol.com)

## Minutes of the January 2017 HAD Town Hall

*Ken Rumstay, Valdosta State University*

The annual HAD Town Hall convened at 12:45 pm on January 4th in the Texas 3 meeting room at the Gaylord Texan Resort and Convention Center in Grapevine. Committee members in attendance were Marc Rothenberg (Chair), Pat Seitzer (Vice Chair), and Ken Rumstay (Secretary-Treasurer). Absent were Brenda Corbin and Linda French. Also in attendance were newly-elected Vice Chair Alan Hirshfeld and newly-elected Committee members Pedro Raposo and Robert Stencil.

Chair Marc Rothenberg began the meeting by welcoming all in attendance, and introducing the Committee members. He then presented a brief

review of the 2016 HAD meeting, held January 4-5 in conjunction with the January AAS meeting in Kissimmee, Florida. That meeting comprised three oral sessions (totaling sixteen presentations) and a poster session (featuring three posters). For comparison, the January 2017 meeting features fourteen oral presentations, a panel session, and seven posters.

Secretary-Treasurer Ken Rumstay presented data related to the overall health of the Division. Total membership stands at 320, up from recent years. The tables below provide a detailed account of the various membership categories, and of HAD's current financial status.

Membership Category	12/12	12/13	12/14	12/15	12/16
Full	145	133	132	140	139
Associate	39	41	48	48	49
Junior	12	19	17	8	8
Emeritus	70	72	77	86	96
Divisional Affiliate	35	27	24	23	25
Other	6	2	4	3	3
<b>Total</b>	<b>306</b>	<b>294</b>	<b>302</b>	<b>308</b>	<b>320</b>

*HAD membership statics (2012-2016)*

	2014	2015	2016
Balance as of January 1 <sup>st</sup>	\$16,235.91	\$18,129.99	\$17,553.73
Income	4,986.50	4,505.54	5,069.95
Expenditures	3,092.42	5,081.80	2,080.43
Balance as of December 31 <sup>st</sup>	\$18,129.99	\$17,553.73	\$20,543.25

*HAD operating account (2014-2016)*

	2014	2015	2016
Balance as of January 1 <sup>st</sup>	\$36,147.00	\$35,637.99	\$34,767.75
Income	1,582.88	(870.24)	3,968.84
Expenditures	2,091.89	0.00	1,502.44
Balance as of December 31 <sup>st</sup>	\$35,637.99	\$34,767.75	\$37,234.15

*LeRoy E. Doggett Prize account (2014-2016)*

	2014	2015	2016
Balance as of January 1 <sup>st</sup>	\$16,621.62	\$20,157.38	\$21,121.44
Income	3,594.76	1,850.29	3,778.25
Expenditures	59.00	886.23	47.35
Balance as of December 31 <sup>st</sup>	\$20,157.38	\$21,121.44	\$24,852.34

*Donald E. Osterbrock Prize account (2014-2016)*

HAD is in good financial shape, with balances (at the end of 2016) in all three of its accounts at a three-year high. Ken noted that for the past several years the Osterbrock Prize had been highlighted as a giving opportunity in annual renewal notices sent to members. This is reflected in the fact that we received \$1840 in donations to the Osterbrock Fund in 2016, with donations totaling \$821 made to the Doggett Prize Fund. We may wish to highlight that fund when the 2018 renewal notices are prepared.

Ken concluded his report by thanking all those who had made financial donations to HAD in 2016, by noting that the deadline for nominations for the 2018 Doggett Prize is 2017 March 1, and by soliciting contributions for the April 2017 issue of *HAD News*.

Vice Chair Pat Seitzer reported on coming changes to the AAS Obituary website. The revised website will allow users to search for entries alphabetically (by last name) or chronologically (by date of birth); it promises to be much easier to use and to maintain. There are currently over 500 obituaries online; that number is expected to double within a short time. Pat closed by noting that we are lacking obituaries for a number of deceased AAS members, and encouraged people to help where they could.

Jennifer Bartlett, Chair of the AAS Working Group on the Preservation of Astronomical Heritage, then addressed the meeting. Her group had prepared a resolution, titled Increasing Editorial Discretion Over Access to the Archives of the Publications of the American Astronomical Society, to be presented to the AAS Council for consideration. This resolution recommends that the AAS amend the confidentiality guidelines contained with the Professional and Ethical Standards for AAS Journals. The resolution had been reviewed by the HAD Executive Committee that morning, and its members had unanimously agreed to present the resolution to the HAD membership for a vote. The vote at the Town Hall was unanimous in favor of the resolution, with one abstention.

Chair Marc Rothenberg then engaged the audience in a discussion of possible formats for future HAD meetings. This discussion was prompted by an online discussion (in October) amongst HAD members of the cost of attending HAD meetings. Marc pointed out that approximately one-third of our members have Emeritus status, and may not

receive any institutional support. The following options were introduced:

1. Continue to meet in conjunction with the AAS in January of each year.
2. Hold a joint meeting with another AAS division.
3. Meet independently.
4. Meet twice a year: in January with the AAS and again later in the year. This second meeting would be either independent or in conjunction with some other organizational meeting. Presumably the venue would be selected so as to provide a lower-cost option to members.

To some extent we have already adopted the fourth option: last October's Planetary Astronomy Division meeting in Pasadena featured a HAD session, and we plan to make this a regular feature at future meetings. It is worth noting, however, that the registration fee for that meeting was significantly higher than the current Early Registration fee for AAS meetings!

The consensus among the members present was that we should continue to meet in conjunction with January AAS meetings, at least in even-numbered years when the Doggett Prize Lecture is presented as a plenary talk to the AAS. The HAD Committee will continue to discuss the other options, however. Pedro Raposo noted that the biennial history of astronomy workshops held at the University of Notre Dame have been very successful, and might become more closely linked to HAD.

Dr. Rothenberg then introduced for discussion two proposals regarding future HAD meetings. The first concerned the traditional HAD "mini-banquet". In light of the difficulty experienced in identifying a viable venue for that event at the Grapevine meeting, the AAS had suggested that it become an "official" activity. In that case the site and cost would be determined by HAD before early registration for an AAS meeting opens, and payment for the banquet would be collected as part of the registration process. The audience response was mixed, with Joseph Tenn (who originated the event) strongly opposing. He pointed out that the mini-banquet was introduced in response to the high cost of the AAS meeting banquet, and feared that history might repeat itself. Since the next two HAD meetings are scheduled for National Harbor and Seattle, where (as in the past) local HAD members should be able to assist with arrangements, it was decided to retain the current

structure for the banquet and to revisit the topic in three years if necessary.

The second proposal, first made by HAD member Ken Kellerman, involves our meeting structure. If adopted it would give us greater flexibility in scheduling oral presentations, and consists of the following points:

- 1 We would propose to the AAS that our two-day registration fee cover a period extending from the afternoon of day one of the AAS meeting through the morning of day three.
- 2 The HAD meeting schedule would consist of Special Sessions on the afternoon of day one, and the morning and afternoon of day two (with the HAD Town Hall in between). A session of short contributed papers would be scheduled for the morning of day three
- 3 We would modify the special session format. Instead of limiting them to thematic sessions, individuals could propose (and provide the HAD Committee with abstracts) talks twenty or thirty minutes in length. These would be organized into broad-area sessions. We would have to make it clear to potential contributors that some proposed papers might be rejected for lack of space.
- 4 In the case of those abstracts submitted for long (20 to 30 minutes) talks which are not accepted, authors would be offered the choice of presenting a shorter talk on day three, or a poster in the poster session.

The members in attendance viewed this proposal favorably, though no formal vote was taken. David DeVorkin noted that, with limited space for “long” talks, the contributions would need to be carefully vetted by the Executive Committee.

The meeting concluded with the introduction of the new HAD officers for 2017-2019. Marc Rothenberg passed the gavel to Pat Seitzer, who will serve as Chair for that period. New Vice Chair Alan Hirshfeld, and new Committee members Pedro Raposo Robert Stencel were formally introduced to the membership.

The meeting adjourned at 1:45 pm.

Submitted March 22, 2017

[hadsec@aas.org](mailto:hadsec@aas.org)



### **Concerning the Archives of the AAS Journals**

*Jennifer Lynn Bartlett, U.S. Naval Observatory  
and WGAH*

The Working Group for the Preservation of Astronomical Heritage (WGAH) thanks HAD for endorsing our resolution [“Increasing Editorial Discretion over Access to the Archives of the Publications of the American Astronomical Society”](#) at your 2017 business meeting. The resolution recommends that the AAS Council take the following actions:

1. Modify the confidentiality guidelines for the AAS journals so that the editor in chief may allow qualified researchers access to editorial correspondence before the current 50-year embargo period expires, provided the names of the referees are redacted.
2. Extend the current confidentiality guidelines for the AAS journals to all its past publications

We communicated this resolution to the Publications Board and to the AAS Council. After some discussion at the last Publications Board meeting, that committee tabled our recommendation until they could understand the implications for the journal archives more fully. We would appreciate your assistance in promoting awareness of these valuable resources, in preserving them for future studies, and in increasing their accessibility.

The AAS journal archives contain editorial correspondence that is essential to understanding the development of the science presented in the publications. It shows how the final articles were shaped by the review process. In addition, rejected contributions, which may be available nowhere else, can be as revealing as those that are eventually accepted. The history of our field encompasses more than the contributions and

experiences of particular astronomers. The journal archives also include primary source material that could illuminate the processes through which our science is accomplished and the culture in which we operate, along with how this environment is changing with each generation; such studies may not require the identification or direct quotation of any individuals involved in the publication process. Thus, preservation of and access to the journal archives is important for historians of astronomy and the whole astronomical community.

Currently, access to and use of editorial correspondence related to the AAS journals is prohibited for 50 years, although the editor in chief may permit the use of such material in aggregate studies after only 15 years. The AAS Council adopted the current [confidentiality guidelines](#) in 2008 after the [WGPAH and HAD requested the embargo period be reduced](#). In the more distant past, individual editors applied their own policies. Eventually, those editors committed their journal-related correspondence to professional archives along with their other working papers, further complicating questions of confidentiality and access. Most recently, submissions have become electronic submission; while this correspondence is theoretically being retained, the mechanics of reviewing it have not been tested.

If we move from considering the theoretical potential to the practical difficulties, the records from Helmut Abt's service as editor of the *Astrophysical Journal* (*ApJ*; 1971–1999) are of immediate concern. During his tenure, the default confidentiality policy restricted access in perpetuity, although correspondents could grant access after 50 years by marking the return form appropriately. The AAS is currently paying to store more than 600 linear feet (1–2 million pages) of this material under suboptimal conditions. As currently stored, the contents are effectively inaccessible and undiscoverable. Although this period was one of phenomenal growth for the *ApJ* and for our field, several professional archives have declined to accept this collection because of its size, condition, and/or access restrictions. Consequently, decisions regarding the long-term retention and conservation of Abt's *ApJ* records have been repeatedly deferred. Ultimately, procrastination is an acceptance of the risk of losing material to deterioration and a dismissal of

scholarly potential of documentation accumulated during a dynamic era in modern astronomy.

The WGPAH is committed to working with the Publications Board and AAS Council to achieve a policy regarding the retention, preservation, and accessibility of the editorial records of the journals that balances the confidentiality required for a sustainable scientific review process with the scrutiny required for substantive historical studies.

[jennifer@bartlettastro.com](mailto:jennifer@bartlettastro.com)



## **The AAS Oral History Project: A Summer of Interviews!**

*Jarita Holbrook, University of the Western Cape*

The American Astronomical Society's Oral History project will be very active in 2017. Our interview team, made up of HAD members, traveled to the winter meeting in Grapevine, Texas; next we will be at the AAS summer meeting in Austin, Texas. In August, along with eclipse viewing, we will be at the HEAD meeting in Sun Valley, Idaho. Please encourage your colleagues to sign up to be interviewed!

To those who have already been interviewed: Thank You! Our team enjoys learning about individual paths into and through astronomy careers. However, please take the time to edit the transcript of your interview and get it back to us as soon as possible. Please feel free to include photographs, too!

The Oral History project needs help! We need HAD volunteers to read over transcripts of the interviews and to work with the astronomers to edit them to their satisfaction. Volunteers can contact me directly via my email.

Contact me at [astroholbrook@gmail.com](mailto:astroholbrook@gmail.com).





### A Note of Thanks

*Tom Hockey, University of Northern Iowa*

I would like to thank the Historical Astronomy Division for awarding the third Donald E. Osterbrock Book Prize to me and the other authors of the *Biographical Encyclopedia of Astronomers* (2nd edition.). I am the first HAD member thus honored. I especially appreciate Steven Dick's nomination and the work of Jay Pasachoff's Prize Committee. Thank you, finally, to the thirty or so persons who attended the special session devoted to the *BEA*, even though it took place before the AAS meeting started. Speakers included Virginia Trimble and Marc Rothenberg.

A new copy of the *BEA*, provided gratis by Springer, was auctioned off after the session, the proceeds going to the Prize endowment. A \$900 bid was accepted from Virginia Trimble; at her request the volumes themselves were donated to a needy Liberal Arts college.

With Appreciation,  
Thomas Hockey

[thomas.hockey@uni.edu](mailto:thomas.hockey@uni.edu)

### Swarthmore Seeks New Homes for Sproul Observatory's Instruments

*Sara J. Schechner, Harvard University*

The Swarthmore College campus is an arboretum, which makes the school loath to dig up trees for new buildings when it can repurpose its heritage structures. Built at the turn of the 20<sup>th</sup> century, the Sproul Observatory is such a building undergoing renovation in the 21<sup>st</sup>.

Since 1911, the observatory has been home to a 24-inch aperture, f/18 refracting telescope made by the John A. Brashear Company of Pittsburgh. The telescope is ranked as the sixth largest

refractor in the United States (in a tie with the 24-inch telescope by Alvan Clark & Sons at the Lowell Observatory). Its cast iron mount is a twin of the 30-inch Thaw refractor at Allegheny Observatory, and the instrument weighs 50,000 pounds. Acclaimed in its day as a superior visual telescope, the instrument was also used for astronomical photography. It obtained more than 100,000 photographs on 5 × 7 inch glass plates. Most of these photographs were used in parallax and double-star work. Indeed, the photographic enterprise is one reason that the telescope is of historical significance. This was the instrument with which astronomer Peter van de Kamp studied Barnard's Star and claimed in 1963 to have discovered an exoplanet.

Today, the Sproul telescope has been supplanted for teaching and research by a 24-inch RCOS telescope in the Peter van de Kamp Observatory atop the school's new Science Center. Swarthmore College has new plans for the old building. But what should become of the telescope, glass plates, the observatory library, and miscellaneous instruments? Learning of Swarthmore's dilemma, the AAS Working Group for the Preservation of Astronomical Heritage (WGPAH) reached out to offer assistance.

In February, Ken Launie and I visited Swarthmore and explored the nooks and crannies of the Sproul Observatory. We made an itemized list of significant historical things found on site —



*The 24-inch Brashear telescope at Sproul Observatory, Swarthmore, PA, c. 1970.*



e.g., instruments, the plate collection, the library, large-format photographs, and lantern slides—and made recommendations for their dispersal to archives, museums, a plate repository, and so forth. Next to each item was the name of one or more WGRAH specialists able to offer procedural advice. For instance, Wayne Osborn and Elizabeth Griffin were listed for questions concerning the plates; Brenda Corbin was the go-to person for the observatory publications; and David DeVorkin and myself could comment on the instruments, especially since some may merit acquisition by the Smithsonian Institution.

We examined the telescope as closely as we could with the assistance of Chris Ray, whose business card reads Celestial Mechanic. Chris lives locally and has repaired the telescope on a number of occasions. Ken prepared a condition report of the telescope, and we assisted Swarthmore in developing a plan to find it a new home.

Ideally, the college would love to see the Sproul refractor transferred to another institution able to restore and use it for education, research, or display as a working instrument or museum object. We know of three examples of successful reuse of similar telescopes: Princeton's 23-inch Alvan Clark & Sons telescope (1882) is now installed at the Roper Mountain Science Center in Greenville, SC; Columbia's 12 <sup>3</sup>/<sub>8</sub>-inch Clark refractor (1926) is being used at the South Carolina State Museum in Columbia, SC; and the 24-inch Clark refractor commissioned by Percival Lowell in 1895 was recently restored and returned to public use at the Lowell Observatory in Flagstaff, AZ. The last thing Swarthmore College wants to do is scrap the telescope, but if there are no takers, that will be its sad fate. The official request for proposals, the condition report, and photographs of the telescope's present state are available for download at <http://tinyurl.com/htc6pff>. Proposals must be received by April 15, 2017. The college hopes that the telescope will be removed by late summer.

[schechn@fas.harvard.edu](mailto:schechn@fas.harvard.edu)

*Editor's note: We are delighted to report that, as this issue was about to go to press, a STEM group has submitted a proposal to relocate and restore the Swarthmore telescope. We'll be reporting on this exciting development in our next issue!*



## Chasing Eclipses: A New Temporary Exhibition at the Adler Planetarium

*Pedro M. P. Raposo, Adler Planetarium*

As you read this, your plans to observe the upcoming total eclipse of the Sun on August 21<sup>st</sup> are likely well settled. If not, you should hurry up, especially if you are not lucky enough to be based somewhere along the eclipse's shadow path, which will cross twelve states, stretching from Oregon to South Carolina.

As the Boston-based eclipse enthusiast Rebecca R. Joslin wrote in *Chasing Eclipses* (1929), "eclipses are elusive and provoking things... visiting the same locality only once in centuries. Consequently, it will not do to sit down quietly at home and wait for one to come, but a person must be up and doing and on the chase!"

Why are total eclipses of the Sun so alluring? What has motivated people throughout history to understand and predict them, and to travel far and wide just to experience a phenomenon that never lasts longer than a few minutes (if the caprices of the weather do not ruin the spectacle altogether)? And how important was the study and observation of eclipses for our modern understanding of the Universe?

These are some of the questions addressed in the Adler Planetarium's new temporary exhibition, "Chasing Eclipses". Named after Joslin's book, and obviously motivated by the Great American Eclipse of August 21, 2017, the exhibition will help visitors get ready to observe this eclipse, while informing them about future ones and highlighting the historical significance of solar eclipses at large.

Several artifacts from the collections of the Adler Planetarium will be on display, illustrating five major themes: 1) the tools used in different

historical periods to plan and perform eclipse observations; 2) the efforts to understand and predict eclipses, from Antiquity to the 17<sup>th</sup> century; 3) the improvement of eclipse prediction and the development of eclipse maps in the 18<sup>th</sup> century; 4) the use of solar eclipses to investigate the structure and dynamics of the Sun and to test the theory of general relativity; 5) finally, the importance of solar eclipses in the popularization of astronomy, and the blend of science and tourism cultivated by “eclipse chasers” from the last quarter of the 19th century onwards.

Items featured in “Chasing Eclipses” include Peter Apian’s *Astronomicum Caesareum* (1540), known for its impressive volvelles, some of which could be used for eclipse prediction; a 17<sup>th</sup>-century instrument for calendar and eclipse calculations presented as an “eclipseometrum”; a clockwork-driven tellurian by George Graham (1673-1751), which is likely the first device of its kind ever made; and the well-known map by Edmond Halley showing the shadow path of the eclipse of May 3, 1715 (April 22 in Old Style) over England.

The exhibition is part of a broader program promoted by the Adler Planetarium, which will include public observation of the August 21<sup>st</sup> eclipse in Museum Campus, Chicago (where the eclipse will be partial, with a maximum of 90%) and in Carbondale (where totality is predicted to last for roughly 2.5 minutes).

Don’t miss the eclipse, and if you are in the Chicagoland area or planning to visit sometime between late March 2017 and early January 2018, make sure to check out our exhibition as well!

Chasing Eclipses will open on 25 March 2017 and will close on January 7<sup>th</sup> of the following year. For further information please visit our website at: <http://www.adlerplanetarium.org/events/chasing-eclipses/>.

[praposo@adlerplanetarium.org](mailto:praposo@adlerplanetarium.org)

Illustrated here are four of the artifacts currently on display at the Adler Planetarium. Pictured at right are Peter Apian’s *Astronomicum Caesareum* (top), dating from 1540, and a 17<sup>th</sup> century “eclipseometrum” (bottom). On the opposite page are (at top) a clockwork-driven tellurian constructed in the early 18<sup>th</sup> century by George Graham; and the famous map drawn by Edmond Halley which shows the path of totality across England for the solar eclipse of April 22, 1715 (old style).







## The Bruce Telescope and Miss Leavitt's Work on Exhibit

*Sara J. Schechner, Harvard University*

The Bruce photographic telescope was the most powerful telescope in the world when it was completed in 1893. Made by Alvan Clark & Sons of Cambridge, Massachusetts, the telescope was a doublet, having two massive, crown-flint pairs of lenses with a clear aperture of 24 inches and a combined focal length of 11 feet. In front was a removable prism for dispersing starlight into spectra. The telescope was sent by the Harvard College Observatory to Arequipa, Peru and then to Bloemfontein, South Africa in order to photograph the southern sky on giant glass plates. More sensitive than the naked eye, the photographic plates revealed the existence of hundreds of thousands of unknown stars and galaxies. Study of these astronomical photographs by Henrietta Swan Leavitt, a “computer” at the Harvard College Observatory, led to her discovery of the period-luminosity relationship of Cepheid variables. Published in 1908 and 1912, Leavitt’s findings offered a new method for measuring the dimensions of the universe.

The double-slide plate holder, which was the Bruce telescope tailpiece, has long been on display in the dome of the Great Refractor at the Harvard College Observatory, but the whereabouts of the rest of the telescope tube and optics were unknown until recently. They were discovered scattered among several buildings at the Oak Ridge Observatory in Harvard, MA, by the curator of Harvard University’s Collection of Historical Scientific Instruments who was documenting the





site and making acquisitions. Curiously, each optical element had been removed from its cell and crated separately before being shipped back to Massachusetts from South Africa more than fifty years ago. Each element has now been restored to its original cell.

The four lenses and objective prism are featured in a new special exhibition, *Scale: A Matter of Perspective*, which opened on March 10, 2017 at the Collection of Historical Scientific Instruments. Accompanying the Bruce optics are the tailpiece, photographic plates of the Small Magellanic Cloud studied and annotated by Henrietta Leavitt, a pair of her notebooks, and flyspanners. Also of interest to HAD members are early reflecting and achromatic refracting telescopes made by Short, Passemant, Paris, Dollond, and Fraunhofer — the latter two owned by James G. Baker, an optical scientist and astronomer of equal fame. The exhibition also includes scale models (both astronomical and anthropological), miniatures, microscopes, and cultural objects from collections across Harvard University.

The Scale exhibition is a collaboration of the Harvard Museums of Science and Culture. For more information, please visit our website at <http://hmsc.harvard.edu/news/scale>.

[schechn@fas.harvard.edu](mailto:schechn@fas.harvard.edu)



Henrietta Swan Leavitt (1868-1921)



The Bruce photographic telescope at Arequipa, Peru, 1906.



Detail of Leavitt's annotations on a photographic plate of the Small Magellanic Cloud, taken 28 October 1897 at Arequipa.



The lid of a shipping crate for part of the Bruce telescope, as found in the field.

## A Call for Reviewers

Javier Rodriguez, *Vernon Press*

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## Book News

Ken Rumstay, *Valdosta State University*

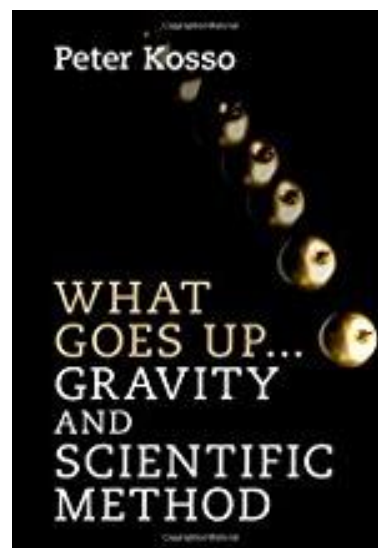
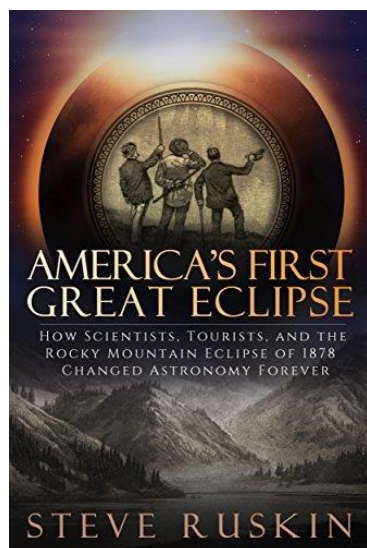
We have learned of two recently published books which should be of interest to our readers!

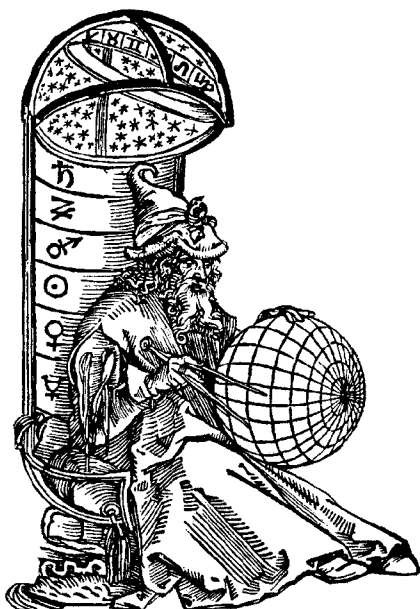
In time for the August 21<sup>st</sup> solar eclipse we have an e-book by noted historian of astronomy Steve Ruskin. *America's First Great Eclipse: How Scientists, Tourists, and the Rocky Mountain Eclipse of 1878 Changed Astronomy Forever* (Alpine Alchemy Press) is an entertaining account of the Rocky Mountain eclipse of 1878. The names of many HAD members appear in the acknowledgements! The book may be ordered from Amazon at <http://amzn.to/2oWwdZs> or from Kobo at <http://bit.ly/2pMYCpF>.

Then, from the hand of philosopher of science Peter Kosso, we have *What Goes Up... Gravity and Scientific Method* (Cambridge University Press, ISBN-13: 9781107129856). Following the history of gravity from Aristotle to Einstein, this clear account highlights the logic of scientific method and demonstrates how scientific ideas are developed, challenged and changed. Limited mathematics and clear explanations allow all those who are curious about gravity to gain a deeper understanding of gravity and how science works.

If you would like to see any new works in the history of astronomy featured in these pages, please let me know! And, if you think a book is worthy of consideration for the Osterbrock Prize, let Marc know!

[hadsec@aaas.org](mailto:hadsec@aaas.org)





### Historical Astronomy Division of the American Astronomical Society

HAD News #89, April 2017, edited by Ken Rumstay. Please send contributions for the next issue, comments, etc. to [hadsec@aaas.org](mailto:hadsec@aaas.org).

A complete version of this newsletter, with color photographs and active links, may be found at <https://had.aas.org/sites/had.aas.org/files/HADN89.pdf>

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HAD News  
c/o K.S. Rumstay  
Department of Physics, Astronomy, and Geosciences  
Valdosta State University  
Valdosta, GA 31698